

imitations. The magistrate, Mr. Newton, was therefore to a considerable extent justified in stating that the designer of the map seemed to have constructed it out of his own brain, and he virtually dismissed the summons.

FROM the report read at the annual meeting of the Nottingham Literary and Philosophical Society, we see that it now has 352 members of various classes. The Society has had several scientific lectures during the session, and we are specially glad to see that the Natural Science Section is in a flourishing condition, having had twenty-nine meetings and excursions during the session, at which papers were read on various subjects of scientific interest.

THE Société Française de Navigation Aérienne, an institution which has been approved by the Minister for Public Instruction, is to organise a collective exhibition at the Champ de Mars. It will include any means of propelling and governing in the air. Any instrument which has proved efficacious in some degree will be admitted if its dimensions are not too large, or by model, if otherwise. Any apparatus for making aerial observations, or helping aeronauts in any way will be admitted. The collection will also include maps, books, manuscripts, and newspapers relating to aerial navigation.

WE have received from Dr. Warren de la Rue a small pamphlet containing two sets of tables which must prove of great use to most scientific workers. There are tables for the reduction to 0° centigrade of a mercury column observed with a glass scale divided into millimetres, and tables for the reduction of millimetres (mercurial pressure) to thousandths and millionths of an atmosphere, and *vice versa*. These tables are printed for private circulation.

AN important Russian work has just been published by Prof. Inostrantsef—"Geological Sketch of the Poyenetz District, Government Olonetz, and of its Mines." This large volume (750 pp.), being the result of seven years' explorations, contains detailed reports on the travels of the author, an orographical description of the district (the surface of which exceeds that of Switzerland), an interesting chapter on the metamorphism of the green slates, and a sketch of the glacial formations. It is accompanied by maps, engravings, and chromolithographed plates representing microscopical cuttings of rocks.

THE additions to the Zoological Society's Gardens during the past week include an African Turkey Buzzard (*Buteo tachardus*) from Africa, presented by Mr. A. Anderson, F.Z.S.; two Rendall's Guinea Fowls (*Numida rendalli*) from Bogos Country, Abyssinia, presented by Capt. Burke, s.s. *Arctot*; three Carpet Snakes (*Morelia variegata*) from Australia, presented by Mr. J. Moseley; a Guianan Crested Eagle (*Morphnus guianensis*) from the Upper Amazons, a Green-necked Pea-fowl (*Pavo spicifer*) from Java, two Barred-tailed Pheasants (*Phasianus reevesi*) from North China, a One-wattled Cassowary (*Casuarus uniappendiculatus*) from New Guinea, a Great-headed Maleo (*Megacephalon maleo*) from the Celebes, purchased; an Inconvenient Curassow (*Crax incommoda*) from South America, deposited; a Derbian Wallaby (*Halmaturus derbianus*) born in the Gardens.

OUR ASTRONOMICAL COLUMN

COMETS OBSERVED BY HEVELIUS.—Of the eight comets observed by Hevel, better known as Hevelius, at Dantzic, with such degree of precision as could be attained with his instruments, the observations of two only have been reduced with the aid of modern places for comparison stars, &c., and in these two cases only have we other orbits than those calculated by Halley, which appear in his *Synopsis Astronomiæ Cometice*. The observations of the comet of 1664 have been discussed by Herr

Lindelof, with the view of ascertaining whether any support were afforded by them, to a conjecture of identity of the comet, with the first comet of 1853; and those of the comet of 1683, were similarly reduced by Mr. W. E. Plummer, in his examination of the elliptical tendency of the orbit indicated by the computations of Prof. Clausen, who had previously recalculated a few of the observations. There remain the comets of 1652, 1661, 1665, 1672, 1677, and 1682; Mechain's reduction of the observations of the second of these bodies nearly a century since, will hardly be considered final.

The observations of the comets of 1672 and 1677 were published in the second volume of the *Machina Cœlestis*, and in small special treatises. This second volume of the great work of Hevelius, as is well known, is extremely scarce, the whole of the impression, with the exception of such copies as had been already presented to astronomers having been lost in the fire which destroyed the observatory, library and papers of Hevelius on September 26, 1679. The copies thus saved were [so few in number, that as Lalande remarks "On peut regarder cet ouvrage comme un manuscrit;" and the special treatises to which we have alluded are perhaps of equal difficulty of access. The observations of the comets of 1652 and 1661 were printed in the *Cometographia*, not a work of very great rarity, as well as in the scarce volume of the *Machina Cœlestis*; those of the comet of 1665 also appear in this volume, in a special treatise, and in the *Prodromus Cometicus*, while those of the comet of 1682 (Halley's comet) are found in *Annus Climactericus*, and have been fully utilised.

A new reduction and discussion of the observations of the comets of 1652, 1661, 1665, 1672, and 1677, is certainly a desideratum, and important assistance in this direction might be afforded by a republication of the original observations of Hevelius from some quarter where the scarce volume is accessible. Mädler remarks upon a certain degree of resemblance between the elements of the comet of 1672 and those of the comet of 1812, which is shortly expected to return to perihelion; and it has been pointed out in this column that Halley has given the descending in place of the ascending node, for a comet observed in 1686—an oversight which has found its way into all catalogues of cometary orbits hitherto published, so that a re-computation of the orbits of the five comets we have mentioned, which now rest upon the figures of the *Synopsis Astronomiæ Cometice* is wanted, if only for verification.

"THE OBSERVATORY."—The second number of this new periodical is before us. Mr. David Gill continues his paper on "The Determination of the Solar Parallax;" we have the first part of an article giving the substance of a lecture recently delivered at Gresham College, by the Rev. E. Ledger, on "The Scintillation or Twinkling of the Stars," which has long been an obscure subject; Mr. Marth continues his Ephemerides for aiding physical observations of the Moon, Mars, and Jupiter; and there is also a report of the proceedings at the last meeting of the Royal Astronomical Society, including the discussion on the papers read, which, as was mentioned in a previous notice, it is intended should form a feature of the publication. We think every one who is competent to judge of the actual state of the case will agree in the opinion expressed at p. 55, while remarking on Mr. Todd's extension of Damoiseau's Tables of Jupiter's Satellites to the end of the present century, that "the time has hardly yet come for the formation of entirely new Tables." So far as regards the necessary observations, it must be admitted that they are being followed up with vigour at several observatories. The first binary star orbit on p. 58, refers to ϵ Scorpii (ϵ Libræ of Flamsteed), not to ζ Libræ; the error, however, is made in the *Astron. Nachrichten*, whence the orbit is taken.

L'ÉTÉ DE LA SAINT-MARTIN ET LES ÉTOILES FILANTES.—In No. 493 of the *Bulletin Hebdomadaire* of the French Scientific

Association, the Abbé Lamey, under the above heading, endeavours to explain by a new theory, certain abnormal temperatures which in one case, at least, has formed the subject of popular tradition. "The Summer of St. Martin," as the common phrase runs, presented itself, according to the Abbé, in a very definite manner in the last year; the month of November commenced colder than usual, but on the 12th it suddenly became warmer than from the sun's altitude could have been expected. Long-continued notice of a similar rise in temperature about the feast of St. Martin the Abbé considers is a proof that our ancestors were excellent observers, while the existence of a tradition upon the point shows clearly that the phenomenon has not been confined within restricted limits; it has been exhibited, he says, simultaneously in Europe and in the United States, and this without being materially affected by the climacteric conditions of the places of observation. One circumstance only he thinks appears to influence it, viz., the latitude; it vanishes as the equator is approached, and is not yet known to be recognised in the southern hemisphere.

The anomalous thermometric effect is not, however, perceptible only about St. Martin's Day. There is an analogous phenomenon according to the Abbé, in August: "une chaleur torride qui règne subitement après quelques jours de rafraîchissement de l'air," and a similar effect, though in an opposite direction, has been noticed at the end of April or at the beginning of May, when vernal frosts so disastrous at this season occur, and have often been preceded by "une douce chaleur précoce," as the Abbé terms it, which has hastened forward the vegetation.

After remarking that the cause of such abnormal changes of temperature is not to be sought in any influence residing either in the sun or in the earth's atmosphere, it is suggested by the Abbé that it may be more probably found in what he calls cosmical meteorology, or as we are more accustomed to term this branch of science, meteoric astronomy. In November, August, and April meteors are more numerous than usual, and two of the greatest periodical showers yet observed, fall in November and August. His theory is that when a large number of meteors are passing between the earth and the sun, the solar rays are intercepted to a sufficient extent, to cause a diminution of temperature on the earth's surface, while, when a similar large number of meteors are so placed that they might reflect the heat derived from these rays, and so produce an effect of the opposite nature, that, to use his own words, those calorific rays "qui viendront frapper l'essaim météorique encore voisin de la terre seront réverbérés sur notre planète, de façon à recevoir alors un surcroît de chaleur." The Abbé lays some stress also upon another point of apparent coincidence: the intensity of the periodical meteoric showers of November varies from year to year, and "the summer of St. Martin" does not present itself under the same circumstances in every year.

In thus noticing the Abbé Lamey's attempt to explain a phenomenon which has been so long remarked as to have become a popular belief, at least in France, it will be understood that we are by no means advocating the probability of such a theory.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—In a Convocation held May 23 a decree was carried, without opposition, to the effect that the Vice-Chancellor and Proctors be authorised to nominate a delegate to represent the University at the 400th anniversary celebration of the University of Upsala, in September next.

In a Convocation to be held on June 5 it will be submitted to the House that the Curators of the University Chest be authorised to expend a sum not exceeding 7,000*l.* on the construction and fittings of new chemical laboratories at the University Museum.

Also that a sum not exceeding 2,400*l.* be expended on certain additions to the University observatory.

An examination will be held in common at Magdalen, University, and New Colleges, on Tuesday, June 26, for election to the following mathematical scholarships:—One demyskip at Magdalen College, of the annual value of 95*l.*, inclusive of allowances; one scholarship at University College, of the annual value of 80*l.*, tenable for five years during residence; one scholarship at New College, of the annual value of 100*l.*, tenable for five years during residence. Testimonials of conduct, &c., to the President of Magdalen College, Mr. C. J. Faulkner, of University College, or the Sub-Warden of New College, between 4 and 6 or 8 and 9 P.M., June 25.

The commemoration fixed for June 13 will, it is understood, be held in the Sheldonian Theatre, although no official notice to that effect has appeared. There will be the usual round of festivities attendant on the event, though it has not transpired if the University will confer any honorary degrees on distinguished persons at the commemoration.

CAMBRIDGE.—The Museums and Lecture-rooms Syndicate, in their Eleventh Annual Report, just issued, state that the buildings are in an efficient state of repair, and the collections, to which many valuable additions have been made during the past year, are in good order. They draw attention to the munificence of the Chancellor of the University, the Duke of Devonshire, who has now completely furnished the Cavendish Laboratory with the instruments required by the present state of science. Profs. Liveing, Dewar, and Stuart complain of want of suitable accommodation for the work of their several departments, and the Syndicate concur in the reasonableness of their complaints.

An important report has been issued by the Musical Examinations Syndicate, which states that under existing regulations for obtaining a degree in music no provision is made for testing the literary and scientific qualifications of the candidates. They therefore recommend that no candidate be admitted to the examination for the degree of Mus. Bac. unless he have passed Parts I. and II. of the Previous Examinations, or one or other of their equivalent examinations. As to the examination for the degree of Mus. Bac., it is proposed to divide it into three parts—1, a preliminary examination, consisting of acoustics, harmony, counterpoint; 2, the exercise; 3, a more advanced examination in musical science; and that no person be accepted as a candidate for the second or third parts until he has qualified in the previous part or parts. In order to encourage the study of music, that it be recognised as the subject of an additional special examination for the ordinary B.A. degree, and that a student who has passed the Previous and the General Examinations, and is in his ninth term of residence at least, having previously kept eight terms, shall, on passing the preliminary examinations in acoustics, harmony, and counterpoint, be entitled, when he has kept nine terms, to receive the degree of Bachelor of Arts.

The "Rede" lecture was delivered on May 25 in the Senate House by Sir C. Wyville Thomson, who gave a brief sketch of the main results obtained by the *Challenger* expedition.

LONDON.—A new and additional Chair of Clinical Surgery has been created at King's College, which is to be filled by Prof. Lister of Edinburgh. The Chair of Systematic Surgery is thus still vacant.

EDINBURGH.—The students at the University have, during the past session, taken a step which it seems surprising they have not taken long ago. There is, in the Scotch universities, no college life as in England, the students appearing at their classes at the proper hours, and then dispersing to their respective lodgings in various parts of the town. While this system has undoubtedly its advantages, it is attended with not a few social, moral, and physical drawbacks, so that we are glad to learn that the Edinburgh students have started a Students' Club which has been thoroughly successful, and calculated we believe, if prudently conducted, to be productive of considerable benefit to the raw and lonely Scotch youth "when first he leaves his father's fields," to get what training and equipment for the future fight Edinburgh can give him.

By the transference of Prof. Lister to London, the Chair of Clinical Surgery in the University becomes vacant.

SIR JAMES KAY-SHUTTLEWORTH.—The death took place on Saturday last of Sir James Kay-Shuttleworth, a name well known in connection with educational and social reform. The